Annex 1: COs for all courses

2.6.1 Detail Course outcome
B. Sc. Honours (Geology)

Semester	Course	Course name	Course outcome
I	GEOLOGY-C-101	Earth Systems Science	General understanding on the earth as a planet and its components- the lithosphere, hydrosphere and atmosphere, the geodynamics and history of the earth. Outcome of labwork is to understand the landscape features
	GEOLOGY-C-102	Mineral science	Basic understanding on the building blocks of rocks and minerals, their chemical, physical and optical properties and developing identification skill for the minerals based on these parameters.
II	GEOLOGY-C-201	Elements of geochemistry	Introductory idea on abundance and distribution of chemical elements in the earth and the solar system, composition of the earth, rock-fluid interaction; Learning value addition to geochemical data of geological material through statistical tools and graphical plots and extracting interpretative information
	GEOLOGY-C-202	Structural Geology	Rock deformation and geometric properties of deformed rocks their genesis and manifestation, relation of structure and landforms. Learning of geological map preparation and interpretation, plot of structural elements and their interpretation
III	GEOLOGY-C-301	Igneous Petrology	Detail understanding on the characteristics, genesis, and types of primary rocks, their occurrence; experiential learning through physical observations in hand specimen and under microscope of various igneous rocks. Students develop skill to identify these rocks in natural setting
	GEOLOGY-C-302	Sedimentary Petrology	Generation of sediment and their transformation into sedimentary rocks of various composition through diagenesis, types of clastic and carbonate rocks and their genesis. Through the lab works the students learn identification of various sedimentary rocks and their embedded textural and structural characteristics.
	GEOLOGY-C-303	Paleontology	Nature and type of fossil records, diagnostic criteria for various fossil groups and their significance as a tool in deciphering earth history. Develop skill to identify fossils from morphological features and their use in biochronology
	GEOLOGY-SEC-301	Fieldwork	The students learn in natural setting how to study the megascopic features in rocks, take actual field measurements and systematically document the outcrop characteristics
IV	GEOLOGY-C-401	Metamorphic Petrology	Mechanism and controlling factors in rock metamorphism and resultant products, relation between metamorphism and tectonic deformation. Detail understanding on the megascopic and microscopic characteristics of various groups of metamorphic rocks through lab works.
	GEOLOGY-C-402		To learn how to extract information on earth history from rocks and deduce paleogeographic reconstructions

	GEOLOGY-C-403	Hydrogeology	Basic concepts on groundwater occurrence and distribution, dynamics of flow, physical and chemical properties of groundwater, exploration tools and techniques and management of groundwater resource.
	GEOLOGY-SEC-401	Fieldwork	Students prepare geological maps and sections after a detail field study of the rocks and their measurable properties
V	GEOLOGY-C-501	Economic Geology	Genesis and types of economic mineral deposits, their occurrence and exploration methods. Identification of various ore forming minerals based on observable physical and optical characteristics
	GEOLOGY-C-502	Geomorphology	The process and product of the earth's surface processes and the interactive role of structure, process and time in landscape development. Regional landforms in Indian context.
	GEOLOGY-DSE-501	Exploration Geology	Inbtroductory idea on tools and techniques on exploration for rocks and minerals of economic importance
	GEOLOGY-DSE-502	Introduction to geophysics	Students of geology learn to interface geological understanding with geophysical tools and techniques
VI	GEOLOGY-C-601	Engineering Geology	Students learn the role of geology in design and implementation of engineering structures like dams, highways, bridges and tunnels.
	GEOLOGY-C-602	Remote Sensing and GIS	Knowledge on use of space technology as source of spatial data, analysis and extraction of geological/geomorphic information and geospatial data analysis and management in GIS platforms
	GEOLOGY-DSE-601	Fuel Geology	Coal, hydrocarbon and nuclear power as sources of energy, their occurrence, characteristics and genesis. Geological controlling factors, estimation of reserve and laboratory identification of types and components of coal
	GEOLOGY-DSE-602	Evolution of life through time	The life forms through geological time- from Precambrian to Cenozoic and human evolution. Impact of human action on the earth system.